

## **12.1 Introduction**

This chapter provides the environmental and regulatory background necessary to analyze the traffic issues and evaluates potential traffic impacts associated with project construction. The chapter begins with a description of existing roadway characteristics and local transportation planning guidelines. Information for the traffic analysis was obtained from a visit to the project area and from the Caltrans web site.

## **12.2 Affected Environment**

For the purpose of this chapter, the affected environment consists of the construction area and the roadway system used to access the construction area.

### **12.2.1 Regional Setting**

I-80 is a 4-lane divided freeway that serves as a main thoroughfare through the project area. I-80 runs along the southern border of Nevada County and serves as the primary east-west interstate facility in the region connecting the large urban areas of Reno, Sacramento, and the San Francisco Bay Area. Consequently, the roadway carries a significant amount of traffic destined for areas outside the county. I-80 serves a variety of traffic purposes including interstate and interregional movement of goods; recreational travel to the attractions of the Sierra Nevada, Lake Tahoe, and Reno areas; and weekday commute travel. I-80 1999 average daily traffic volumes were 30,500 vehicles and peak hour traffic volumes during the same year were 3,600 vehicles. Old Highway 40 is closed to public access; the project applicant maintains an easement with Caltrans to access and use it, and also owns a portion of it.

## 12.2.1.1 Level of Service

The quality of service provided by a roadway is measured by its level of service (LOS). LOS criteria established by the Transportation Research Board are shown in table 12-1. This method uses a letter rating to describe the peak-period driving conditions for a particular facility. Letters A–F represent progressively worse driving conditions.

**Table 12-1.** Level of Service Definitions

Level of Service Rating	Definition
A	Free flow; insignificant delays.
B	Stable operations; minimal delays.
C	Stable operations; acceptable delays.
D	Approaching unstable; queues develop rapidly but no excessive delays.
E	Unstable flow; significant delays.
F	Forced flow; low operating speeds.

Source: Transportation Research Board 1994

LOS criteria for highways are established by Caltrans, and take into account numerous variables such as annual average daily traffic, roadway capacity, grade, environment (urban versus rural), and other considerations as appropriate. According to Caltrans policy, LOS D is acceptable for planning purposes, while LOS E and F are considered unacceptable. Nevada County’s LOS criteria also identify LOS D as acceptable for planning purposes in community regions and LOS C as acceptable for planning purposes in rural regions. I-80 is currently operating at LOS B. Consequently, all of the roadways are operating at acceptable levels.

## 12.2.2 Regulatory Setting

### 12.2.2.1 Nevada County General Plan

The Nevada County General Plan provides the policy and implementation framework to guide development throughout the county. The general plan was adopted in 1996 and includes goals, objectives, and policies specific to transportation and circulation. Relevant provisions of the general plan include the following:

Objective 4.1: In *Rural Regions*, establish and maintain a desired level of service that minimizes growth and development.

- Policy 4.1: The minimum level of service allowable in the *Rural Regions* of the County, as identified in the General Plan, shall be level of service (LOS) C, except where the existing LOS is less than C. In those situations, the LOS shall not be allowed to be less than the existing. Level of Service shall be based on the typical highest peak hour of weekday traffic. Special events may be permitted which temporarily exceed this minimum level of service.

Objective 4.2: In *Community Regions*, ensure a desired level of service that supports the current circulation system and provides for future circulation improvements.

- Policy 4.3: The minimum acceptable level of service (LOS) for areas identified as *Community Regions* in the General Plan shall be LOS D, except where the existing LOS is less than D. In those situations, the LOS shall not be allowed to be less than the existing. Level of Service shall be based on the typical highest peak hour of weekday traffic.

### **12.2.2.2 California Department of Transportation Encroachment Permit/Right-of-Way (California Streets and Highways Code Sections 660 et. seq.)**

Project applicants proposing projects for within, under, or over the state highway ROWs are required to obtain an Encroachment Permit from Caltrans. Upon receiving a complete project description and plans from the project applicant, Caltrans evaluates the permit application to determine:

- how the encroachment may disrupt traffic or result in potential hazards to other highway users;
- how the encroachment may impair the design, construction, operation, maintenance, or integrity of the highway;
- how the project proponent will restore the highway to its original condition, including landscaping and drainage; and
- how the proposed encroachment will affect the aesthetics of the highway.

The project applicant initiated discussion with Caltrans regarding construction access and placement of project components in relation to I-80 and planned bridge replacement work in the construction area in May 2000. Caltrans District 3 reviewed an application, determined the encroachment is acceptable, and issued the permit.

## **12.3 Impact Assessment Methodology**

The following section describes the methodology used to assess transportation impacts associated with the proposed project. As described above in “Regional

Setting,” traffic counts from 1999 provide the most current traffic data for I-80. Consequently, 1999 traffic data are used to characterize the baseline traffic condition for the following transportation and circulation analysis. The analysis assumes that the majority of the construction workforce and materials delivered to the project construction area would originate from the Reno metropolitan area.

Operations- or maintenance-related activities would require only occasional inspection visits Reno; therefore, operations-related traffic is considered minimal and is not expected to affect the operating conditions of existing roadways. Consequently, operations-related traffic is not addressed further in this analysis.

## 12.3.1 Analytical Approach

### 12.3.1.1 Trip Generation

In order to assess the magnitude and directional variation of vehicle trips associated with construction of the proposed project, vehicle trip generation was analyzed using an estimate of the required construction-related workforce. Construction of the proposed project would occur over an estimated 8-month period and would require a total construction workforce of 40 workers. Implementation of the proposed project would also generate several daily heavy truck trips (material and equipment deliveries) over the 8-month construction period. Table 12-2 provides an estimate of the total number of construction-related vehicle trips that would be generated by the proposed project, including the peak and average daily vehicle trips.

**Table 12-2.** Construction Vehicle Trip Generation

Vehicle Origin	Distribution of Local Workforce	Average Daily Workforce <sup>a</sup>	Average Daily Vehicle Trips <sup>b</sup>	Daily Peak Hour Vehicle Trips <sup>c</sup>
Reno				
- Construction workers	100%	40	80	40
- Heavy trucks	100%	10–20	20–40	3–6
Total	100%	50–60	100–120	43–46

<sup>a</sup> Average daily workforce includes 100% of the construction workers and an estimate of the average daily number of heavy truck trips generated by the proposed project over the 8-month construction period.

<sup>b</sup> Vehicles and trucks accessing the construction area generate 2 daily trips (1 inbound and 1 outbound).

<sup>c</sup> Peak-hour trip generation is based on 50% of the resultant daily passenger vehicle generation and 15% of the daily heavy truck generation.

Source: (Williams pers. comm.).

Assuming a worst-case scenario, the transportation analysis assumes that each of the 40 workers would drive a separate vehicle to the project construction area, making two trips per day or one round trip from home to the construction area and back. Construction equipment and materials deliveries would occur

throughout the day. Therefore, construction of the proposed project would result in a total of approximately 100–120 vehicle trips per day on average an estimated 43–46 total vehicle trips per day during the peak a.m. or p.m. period (table 12-2).

Additionally, it is estimated that construction-related activities would include the use of several types of equipment including backhoes, scrapers, water trucks, pickup trucks, and front loaders. It is assumed that equipment would be stored on construction area and would not result in a substantial increase in the overall daily project trip generation. Parking for construction personnel and visitors would be provided in an area on or adjacent to the project construction area.

### **12.3.2 Criteria for Determining Impact Significance**

Criteria for determining the significance of impacts on transportation were developed based on questions contained in the environmental checklist form in Appendix G of the California Environmental Quality Act Guidelines (State CEQA Guidelines). Impacts on traffic and circulation were considered significant if the action would

- cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the roadway system;
- cause a violation of an applicable city's or county's roadway LOS threshold;
- substantially alter the present patterns of circulation or movement;
- substantially increase the traffic delay experienced by drivers;
- result in substantial deterioration of the roadway surface following completion of construction activities; or
- expose people to roadway safety hazards.

For the initial screening of impacts of increased traffic, the Institute of Transportation Engineers (1989) recommends that an impact be examined more closely if it involves an increase of 50 or more trucks, 100 passenger vehicles, or an equivalent combination of vehicles per hour in the peak direction during the peak hour at any roadway intersection. For purposes of this analysis, impacts of increased traffic may be considered substantial if the number of project-generated vehicle trips would exceed any of these thresholds.

## 12.4 Impacts and Mitigation Measures of Alternative A: Proposed Project

### 12.4.1 Construction-Related Impacts

#### Impact 12-1: Temporary Construction-Related Increase in Traffic Volumes on Roadways

Traffic generated by the proposed project would increase the traffic volumes on I-80. As described above, I-80 is currently operating at acceptable levels of service (LOS B). Because construction-related activities would not substantially increase the number of daily (0.4%) and peak hour (1.0%) vehicles currently traveling along these roadways and would not contribute to an exceedance of traffic thresholds recommended by the Institute of Transportation Engineers (1989), this impact is considered to be *less than significant*. No mitigation is required.

#### Impact 12-2: Increased Construction-Related Traffic Volume Delay, and Hazard on Local and Regional Roadways

Construction-related activities would involve the use of heavy trucks on a daily basis. Although construction-related activities would only occur over a short period of time, these activities would result in greater-than-normal truck traffic along local roadways. In addition, these trucks would have the potential to increase roadway operation safety hazards on local roadways. Driver conflicts could occur between slower moving vehicles traveling along local roadways as additional heavy trucks travel to and from the project area. This impact is considered to be *significant*.

Implementation of Mitigation Measure 12-1 would reduce this impact to a less-than-significant level.

#### **Mitigation Measure 12-1: Implement a traffic safety plan**

*In order to reduce conflicts between motorists and construction equipment, the project applicant will require the construction contractor to prepare and implement a traffic safety plan (TSP) during the actual construction phase of the project. The TSP will provide for*

- *appropriate vehicle size and speed,*
- *travel routes,*

- *detour or lane closure plans,*
- *flagperson requirements,*
- *location of turnouts to be constructed,*
- *coordination with law enforcement and fire control agencies,*
- *coordination with Caltrans personnel (for work affecting state road rights-of-way),*
- *emergency access to ensure public safety, and*
- *traffic and speed limit signs.*

### **Impact 12-3: Increase in the Demand for Parking Space at the Construction Site**

Traffic generated by the proposed project would increase the demand for construction employee parking spaces and would require the development of an equipment staging area at the project operation area. However, adequate parking and equipment staging areas would be included along Old Highway 40 as part of the proposed project to address parking and equipment storage needs. Because construction-related parking and equipment storage needs would be addressed by onsite employee parking and equipment storage areas, this impact is considered to be *less than significant*. No mitigation is required.

## **12.4.2 Operation-Related Impacts**

No transportation impacts are expected to occur during operation of the proposed project. Trips generated by employee and maintenance workers going to and from the Farad powerhouse are expected to be minimal and would not affect local circulation or traffic.